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| 09/930,800 | 08/15/2001 | Gordon James Yorke | OR02-13201 | 3560 |

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EXAMINER

LEROUX, ETIENNE PIERRE

ART UNIT PAPER NUMBER

2161

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Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|--------------------------------------|--|--|
| Office Action Summary | Application No. 09/930,800 | Applicant(s) YORKE, GORDON JAMES | |
| | Examiner Etienne P LeRoux | Art Unit 2161 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 November 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 August 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

Claim Status

Claims 1-18 are pending. Claims 19-50 have been cancelled. Claims 1-18 are rejected as detailed below.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-18 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Claim 1 in the preamble recites "A method for setting a new reference value for managing bi-directional relationships between objects in an object model of a relational database." The specification does not include a clear and concise written description of the manner of making bi-directional relationships between objects in an object model of a relational database such that a skilled artisan can make and use the invention. The specification in paragraph 10 states the following:

[0010] In accordance with another aspect of the invention, there is provided a method for creating proxy objects for managing bi-directional relationships between objects in an object model. The method comprises the steps of receiving bi-directional relationship information indicating interrelation between objects having one or more bi-directional relationships; and creating proxy objects based on the bi-directional relationship information for selected bi-directional relationship objects having bi-directional relationships at peer relationships that comprise the bi-directional relationships, a created proxy object being capable of receiving a new reference value to be set in a selected object relating to a bi-directional relationship, determining, using one or more of the proxy objects, a new

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peer value to be set in a peer object which has the bi-directional relationship with the selected object, and setting the new peer value to a proxy object created for the peer object.

Instant invention is drawn to managing bi-directional relationships between objects in an object model. The invention is based on an object-oriented model. The invention is not a combination of an object-oriented database and a relational database.

Claims 2-18 are rejected for being dependent from a rejected base claim.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites:

- creating proxy objects based on the bi-directional relationship information for selected **peer** objects having bi-directional relationships
- one or more **peer** objects with which the host relates through a bi-directional relationship
- the host object is a **peer** object of the related peer objects
- receiving a new **peer** value
- determining using one or more proxy objects a new **peer** value to be set for a **peer** object
- setting the new **peer** value in a proxy object created for the **peer** object
- an associated new **peer** object has a bi-directional relationship with the host object

The scope of the invention cannot be determined because the relationship between the above plurality of peer objects is difficult to determine.

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Claim 1 recites:

- creating **proxy** objects based on the bi-directional relationship information for selected peer objects having bi-directional relationships
- wherein the **proxy** objects have knowledge regarding a host object to which the proxy objects belong
- determining using one or more of the **proxy** objects a new peer value
- setting the new peer value in a **proxy** object

The scope of the invention cannot be determined because the relationship between the above plurality of proxy objects is difficult to determine.

Claim 1 recites:

- the proxy objects have knowledge regarding a **host** object
- one or more objects with which the **host** relates
- wherein the **host** object is a peer object
- a bi-directional relationship to be set in the **host** object
- a peer object which has the bi-directional relationship with the **host** object
- an associated new peer object has a bi-directional relationship with the **host** object

The scope of the invention cannot be determined because the relationship between the above plurality of host objects is difficult to determine.

Claims 2-18 are rejected for being dependent from a rejected base claim.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-12 and 14-18 are rejected under 35 U.S.C. 102(b) as being anticipated by US Pat No 5,956,509 issued to Kevner (hereafter Kevner), as best examiner is able to ascertain.

Claim 1:

Kevner discloses:

- receiving bi-directional relationship information indicating interrelation between objects having one or more bi-directional relationships [Fig 5, 400, 410, col 6, lines 39-53]
- creating proxy objects [Fig 5, 404] based on the bi-directional relationship information for selected peer objects having bi-directional relationships, wherein the proxy objects have knowledge regarding a host object to which the proxy objects belong and one or more peer objects with which the host relates through a bi-directional relationship and wherein the host object is a peer object of the related peer objects
- receiving a new peer value relating to a bi-directional relationship to be set in the host object [main MOS object includes a list of pointers, col 14, lines 13-22]
- determining, using one or more of the proxy objects, a new peer value to be set for a peer object which has the bi-directional relationship with the host object; [interface object includes a list of pointers, col 14, lines 13-22]
- setting the new peer value in a proxy object created for the peer object so that an associated new peer object has a bi-directional relationship with the host object without a developer of the object model having to ensure all associated references are maintained [interface object includes a list of pointers, col 14, lines 13-22]

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- wherein the bi-directional relationship is managed so that pairs of corresponding bi-directional pointers get updated together [interface object includes a list of pointers, col 14, lines 13-22]

Claim 2:

Kevner discloses receiving object model meta-data defining relationships [list of pointers, col 14, lines 12-21] between objects in the object model; and retrieving reference value information that represents reference values indicating current peer objects for the bi-directional relationships

Claim 3:

Kevner discloses wherein the bi-directional relationship information receiving step receives the reference value information from a data storage in which data corresponding to the objects is stored [main MOS object includes a list of pointers, col 14, lines 13-22]

Claim 4:

Kevner discloses wherein the bi-directional relationship information receiving step receives the reference value information from a new object that is newly created by a user [inherent in main MOS object includes a list of pointers, col 14, lines 13-22]

Claim 5:

Kevner discloses wherein the bi-directional relationship information receiving step receives the reference value information that includes a collection of reference values for a bi-directional relationship object which references many peer objects [inherent in main MOS object includes a list of pointers, col 14, lines 13-22]

Claim 6:

Kevner discloses wherein the proxy object creating step creates proxy objects of unidirectional peer relationships that combined comprise bi-directional relationships [Fig 5, 400, 410, col 6, lines 39-53]

Claim 7:

Kevner discloses wherein the proxy object creating step creates a proxy object for each of a pair of one-to-one unidirectional peer relationships that form a one-to-one bi-directional relationship [Fig 5, 400, 410, col 6, lines 39-53]

Claim 8:

Kevner discloses wherein the proxy object creating step creates a proxy object for each of a one-to-many unidirectional peer relationship and one-to-one unidirectional peer relationships that form a one-to-many bi-directional relationship [Fig 5, 400, 410, col 6, lines 39-53].

Claim 9:

Kevner discloses wherein the proxy object creating step creates a proxy object for each of uni-directional one-to-many peer relationships that form a many-to-many bi-directional relationship [Fig 5, 400, 410, col 6, lines 39-53]

Claim 10:

Kevner discloses wherein the new peer value determining step comprises a step of passing the new reference value through related proxy objects that are related to the bi-directional relationship [Fig 5, 400, 410, col 6, lines 39-53]

Claim 11:

Kevner discloses wherein the new peer value contains a collection of reference values which is determined based on the new reference value [Fig 5, 400, 410, col 6, lines 39-53]

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Claim 12:

Kevner discloses wherein the new reference value represents addition, removal or change of a reference value [inherent in main MOS object includes a list of pointers]

Claim 14:

Kevner discloses wherein the setting step sets a new peer value by replacing an old reference value with the new peer value [inherent in main MOS object includes a list of pointers]

Claim 15:

Kevner discloses determining, using one or more of the proxy objects, another new peer value to be set in a new peer object which is referenced by the new reference value set for the selected object; and setting another new peer value to a proxy object created for the new peer object [inherent in main MOS object includes a list of pointers]

Claim 16:

Kevner discloses determining, using one or more of the proxy objects, an updating reference value for a related object that is related to the selected object through one or more original or new bi-directional relationships; and setting the updating reference value in a proxy object created for the related object [inherent in main MOS object includes a list of pointers]

Claim 17:

Kevner discloses wherein the updating reference value determining step and the updating reference value setting step are repeated for all related objects so as to maintain bi-directional relationship integrity [Fig 5, 400, 410, col 6, lines 39-53]

Claim 18:

Kevner discloses wherein the updating reference value determining step comprises a step of passing the new reference value through related proxy objects that are created for the related objects [Fig 5, 400, 410, col 6, lines 39-53]

Claims 1, 3-12 and 14-18 are rejected under 35 U.S.C. 102(b) as being anticipated by US Pat No 5, 903,725 issued to Colyer (hereafter Colyer), as best examiner is able to ascertain.

Claim 1:

Colyer discloses:

- receiving bi-directional relationship information indicating interrelation between objects having one or more bi-directional relationships [Fig 8 and col 13, lines 19-52];
- creating proxy objects [Fig 8, item 449] based on the bi-directional relationship information for selected bi-directional relationship objects having bi-directional relationships, wherein the proxy objects have knowledge regarding a host object [object server per Fig 8 item 313] to which it belongs and one of [or] more peer objects with which the host relates through a bi-directional relationship;
- receiving a new peer value to be set in a selected object relating to a bi-directional relationship; [col 7, lines 20-35]
- determining, using one or more of the proxy objects, a new peer value to be set for a peer object which has the bi-directional relationship with the selected object; [col 7, lines 20-35]
- setting the new peer value in a proxy object created for the peer object so that an associated new peer object has a bi-directional relationship with the peer object without a

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developer of the object model having to ensure all associated references are maintained
[alternate pointer to relocated target objects per [col 7, lines 20-351

- wherein the bi-directional relationship is managed so that pairs of corresponding bi-directional pointers get updated together [Fig 8, step 530]

Claim 3:

Colyer discloses wherein the bi-directional relationship information receiving step receives the reference value information from a data storage in which data corresponding to the objects is stored [Fig 8 and col 13, lines 19-52]

Claim 4:

Colyer discloses wherein the bi-directional relationship information receiving step receives the reference value information from a new object that is newly created by a user [Fig 8 and col 13, lines 19-52]

Claim 5:

Colyer discloses wherein the bi-directional relationship information receiving step receives the reference value information that includes a collection of reference values for a bi-directional relationship object which references many peer objects [abstract] Claim 6:

Colyer '725 discloses wherein the proxy object creating step creates proxy objects of unidirectional peer relationships that combined comprise bi-directional relationships [Fig 8 and col 13, lines 19-52].

Claim 7:

Colyer discloses wherein the proxy object creating step creates a proxy object for each of a pair of one-to-one unidirectional peer relationships that form a one-to-one bi-directional relationship [Fig 8 and col 13, lines 19-52]

Claim 8:

Colyer discloses wherein the proxy object creating step creates a proxy object for each of a one-to-many unidirectional peer relationship and one-to-one unidirectional peer relationships that form a one-to-many bi-directional relationship [Fig 8 and col 13 lines 19-52].

Claim 9:

Colyer discloses wherein the proxy object creating step creates a proxy object for each of uni-directional one-to-many peer relationships that form a many-to-many bi-directional relationship [Fig 8 and col 13, lines 19-52]

Claim 10:

Colyer discloses wherein the new peer value determining step comprises a step of passing the new reference value through related proxy objects that are related to the bi-directional relationship [Fig 8 and col 13, lines 19-52]

Claim 11:

Colyer discloses wherein the new peer value contains a collection of reference values which is determined based on the new reference value [Fig 8 and col 13, lines 19-52].

Claim 12:

Colyer discloses wherein the new reference value represents addition, removal or change of a reference value [Fig 8 and col 13, lines 19-52]

Claim 14:

Colyer discloses wherein the setting; step sets a new peer value by replacing an old reference value with the new peer value [col 7, lines 20-35] Claim 15:

Colyer discloses determining, using one or more of the proxy objects, another new peer value to be set in a new peer object which is; referenced by the new reference value set for the selected object; and setting another new peer value to a proxy object created for the new peer object [col 7, lines 20-35].

Claim 16:

Colyer discloses determining, using one or more of the proxy objects, an updating reference value for a related object that is related to the selected object through one or more original or new bi-directional relationships; and setting the updating reference value in a proxy object created for the related object [col 7, lines 20-35].

Claim 17:

Colyer discloses wherein the updating reference value determining step and the updating reference value setting step are repeated for all related objects so as to maintain bi-directional relationship integrity [Fig 8 and col 13, lines 19-52].

Claim 18:

Colyer discloses wherein the updating reference value determining step comprises a step of passing the new reference value through related proxy objects that are created for the related objects [Fig 8 and col 13, lines 19-52].

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kevner in view of US Pat No 5,717,917 issued to Munakata (hereafter Munakata), as best examiner is able to ascertain.

Claim 13:

Kevner discloses the elements of claim 1 as noted above.

Kevner fails to disclose wherein the setting step sets a value null when the determining step determines to remove the bi-directional relationship.

Munakata discloses wherein the setting step sets a value null when the determining step determines to remove the bi-directional relationship.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Kevner to include wherein the setting step sets a value null when the determining step determines to remove the bi-directional relationship as taught by Munakata.

The ordinarily skilled artisan would have been motivated to modify Kevner per the above for the purpose of providing a method of disconnecting the bi-directional link [col 4, lines 28-36]

Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Colyer in

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view of Pub No US 2003/0056195 issued to Hunt (hereafter Hunt), as best examiner is able to ascertain.

Claim 2:

Colyer discloses the elements of claim 1 as noted above.

Colyer fails to disclose receiving object model meta-data defining relationships between objects in the object model; and retrieving reference value information that represents reference values indicating current peer objects for the bi-directional relationships.

Hunt discloses receiving object model meta-data defining relationships between objects in the object model; and retrieving reference value information that represents reference values indicating current peer objects for the bi-directional relationships [abstract].

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Colyer to include receiving object model meta-data defining relationships between objects in the object model; and retrieving reference value information that represents reference values indicating current peer objects for the bi-directional relationships as taught by Hunt.

The ordinarily skilled artisan would have been motivated to modify Colyer for the purpose of providing a method and apparatus for automating generation of object oriented code for an object and thus improving the speed and accuracy of code generation [paragraph 0004]

Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Colyer in view of US Pat No 5,717,917 issued to Munakata (hereafter Munakata), as best examiner is able to ascertain.

Claim 13:

Colyer discloses the elements of claim 1 as noted above.

Colyer fails to disclose wherein the setting step sets a value null when the determining step determines to remove the bi-directional relationship.

Munakata discloses wherein the setting step sets a value null when the determining step determines to remove the bi-directional relationship [col 4, lines 29-40].

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Colyer to include wherein the setting step sets a value null when the determining step determines to remove the bi-directional relationship as taught by Munakata.

The ordinarily skilled artisan would have been motivated to modify per the above for the purpose of providing a method of disconnecting the bi-directional link [col 4, lines 28-36]

Response to Arguments

Applicant's arguments filed 11/24/2004 have been fully considered but they are not persuasive.

Applicant Argues:

Applicant states in the first paragraph on page 8, "In contrast, the present invention uses proxy objects to allow an object-oriented model to be used to maintain and update bi-directional relationships in a relational database (see page 11, lines 13-23 of the instant application)."

Examiner Responds:

Examiner is not persuaded. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant

relies (i.e., features included in lines 13-23 of page 11 of the specification) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Applicant Argues:

Applicant states in the first paragraph on page 8 “There i[s] nothing within Kevner or Colyer, either explicit or implicit, which suggests using proxy objects to allow an object-oriented model to be used to maintain and update bi-directional relationships in a relational database.”

Examiner Responds:

Examiner is not persuaded. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., using proxy objects to allow an object-oriented model to be used to maintain and update bi-directional relationships in a relational database) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO**

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MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Etienne LeRoux whose telephone number is (571) 272-4022. The examiner can normally be reached on Monday – Friday from 8:00 AM to 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Safet Metjahic, can be reached on (571) 272-4023.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571) 272-2100.

Etienne LeRoux

1/5/2005


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